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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,837	09/10/2002	Nikolaos S. Soukos	00786-421002	8657
7590 Fish & Richardson 225 Franklin Street Boston, MA 02110-2804		05/04/2007	EXAMINER CAMERON, ERMA C	
			ART UNIT 1762	PAPER NUMBER
			MAIL DATE 05/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/019,837

Applicant(s)

SOUKOS ET AL.

Examiner

Erma Cameron

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The rejection of Claims 1-18 and 22-27 under 35 U.S.C. 112, first paragraph, (“coupling medium”) is withdrawn because of the amendment filed 2/21/2007.

3. The rejection of Claims 1-4, 13-23 and 25-27 under 35 U.S.C. 112, first paragraph, (“target”), is withdrawn because of the amendment filed 2/21/2007.

4. The rejection of Claims 1-27 under 35 U.S.C. 112, first paragraph, (“capsular”) is withdrawn because of the amendment filed 2/21/2007.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1762

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. The rejection of Claims 15, 19 and 22 under 35 U.S.C. 112, second paragraph, is withdrawn because of the amendment filed 2/21/2007.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The rejection of Claims 1, 13-16 and 22-27 under 35 U.S.C. 102(b) as being clearly anticipated by Sarkar et al (J. Periodont. Res. 28, pp 204-210, 1993) is withdrawn because of the amendment filed 2/21/2007.

9. The rejection of Claims 1, 13-15 and 25-27 under 35 U.S.C. 102(b) as being clearly anticipated by Qian et al (Colloids and Surfaces B: Biointerfaces, 9, pp 239-245, 1997) is withdrawn because of the amendment filed 2/21/2007.

Art Unit: 1762

10. The rejection of Claim 25 under 35 U.S.C. 102(b) as being clearly anticipated by Sadoudi et al (Letters in Applied microbiology, 24, pp 177-179, 1997) is withdrawn because of the amendment filed 2/21/2007.

11. The rejection of Claims 1, 13-15 and 22-27 under 35 U.S.C. 102(b) as being clearly anticipated by Wilson et al (Journal of Antimicrobial Chemotherapy, 37, pp 377-381, 1996) is withdrawn because of the amendment filed 2/21/2007.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The rejection of Claims 2-4 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over Sarkar et al is withdrawn because of the amendment filed 2/21/2007.

Art Unit: 1762

14. The rejection of Claims 2-4 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over Wilson et al is withdrawn because of the amendment filed 2/21/2007.

15. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkar et al taken in view of WO 98/23325.

Sarkar teaches using laser and a photosensitizer, an effective compound against bacteria, to treat *P.gingivalis* colonies from periodontal plaque(see pages 205-209 and Abstract). The effect of permeabilizing the colonies is inherent to the laser effect. Sarkar does not refer to the colonies as biofilms, but the applicant has stated on pages 2 and 3 that periodontal plaque are biofilms.

Sarkar fails to teach the fungi or protozoa of claims 17-18.

Biofilm-like materials containing fungi or protozoa would be equally expected to be effected by the laser treatment as periodontal plaque.

Sarkar fails to teach a laser with coupling medium and target.

'325 teaches using laser-induced impulse transients to deliver compounds, such as therapeutic agents (15:24-34), to epithelial cells (the broad band, compressive laser stress waves have a rise time of 1-200 ns, a peak pressure of 300-200 bars (see page 4)).

'325 further teaches that a coupling medium, which may contain a surfactant of sodium lauryl sulfate (5:3-16), a target material of metal such as aluminum or copper or polystyrene (3:8-18, 12:29-13:9), a transparent material bonded to the target material (3:8-18, 13:10-24).

Art Unit: 1762

and a reservoir of the coupling medium and compound (3:19-28) are used as part of the apparatus for generating laser stress waves.

It would have been obvious to one of ordinary skill in the art to have incorporated the apparatus of '325 into the Sarkar process because of the teaching of '325 that theirs is conventional apparatus for generating laser-induced stress waves.

Response to Arguments

The applicant has argued that there is no reasonable way to couple the target to the biofilm. However, the applicant has succeeded in doing just that. The applicant seems to assume that the biofilm of Sarkar would be mixed in the solution of the reservoir. However, the biofilm of Sarkar could be used in the same setup as applicant has used.

16. The rejection of Claims 5-12 and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Wilson et al taken in view of WO 98/23325 is withdrawn because of the amendment filed 2/21/2007.

17. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sadoudi et al (Letters in Applied Microbiology, 24, pp 177-179, 1997) taken in view of WO 98/23325.

Sadoudi teaches treating biofilms with pulsed laser beams (see Abstract). The effect of permeabilizing the biofilm is inherent to the pulsed laser beam.

Sadoudi fails to teach that the laser beam is from an apparatus that uses a target and coupling medium.

Art Unit: 1762

'325 teaches a laser that includes a target and a coupling medium.

It would have been obvious to one of ordinary skill in the art to have used the apparatus of '325 in the Sadoudi process because of the teaching of '325 that theirs is conventional apparatus for generating laser beams.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erma Cameron whose telephone number is 571-272-1416. The examiner can normally be reached on 8:30-6:00, alternate Fridays off.

Art Unit: 1762

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ERMA CAMERON
PRIMARY EXAMINER

Erma Cameron
Primary Examiner
Art Unit 1762

May 2, 2007